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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,919	03/16/2001	Ronald E. Pelrine	58255-8028.US00	7145

7590

03/26/2003

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EXAMINER

BEX, PATRICIA K

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 03/26/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/810,919

Applicant(s)

PELRINE ET AL.

Examiner

P. Kathryn Bex

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17,36-51,66-78,80-83 and 85-90 is/are pending in the application.

4a) Of the above claim(s) 85-90 is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17,36-51,66-78 and 80-83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 15. 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-17, 36-51, 66-78, 80-83 in Paper No. 18 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. This application contains claims 85-90 drawn to an invention nonelected. A complete reply to the rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show reference no. 2513 in Figs. 25A-D as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "second substrate comprising a additional stations and second driving structures adjacent the second workplace or substrate" in claims 2-3, 43,44, 66 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 3, 44, 66-78 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3, lines 3, "said second workplace" lacks antecedent basis. Same deficiency was found in claim 44.

Claim 66, penultimate line, "laboratory stations" lacks antecedent basis. The claim does disclose "stations", but not "laboratory stations". Same deficiency was found in claims 67, 75. Additionally, the conditional term "can", on line 3 of claim 66, is not a positive recitation, therefore, renders the claim indefinite.

Claim 69, said "interior and exterior drive elements" lack antecedent basis. Examiner believes this claim should depend from claim 68.

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Claims 12, 71-74 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: claim 12 does not recite any structural elements, but merely an intended use of the microparticle. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Similarly, claims 71-74 recite movement of the particle but no structural elements are recited to accomplish the recited function.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

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reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

9. Claims 1-7, 12-17, 36-51, 66, 80, 82-83 are rejected under 35 U.S.C. 102(b) as being anticipated by Batchelder (USP 4,390,403).

Batchelder teaches an apparatus for use in performing dielectrophoretic manipulation of chemical species. The apparatus comprising: a first substrate and second substrate 6 defining a workplace with x-y coordinates; a plurality of magnetic microparticles 10, having effectors (e.g. charge, column 3, lines 42-47), adapted for controlled movement adjacent the workplace; a plurality of stations 80, 82, 84, 86 located at different known workplace coordinates; a first driving means comprising a plurality of first and second drive elements 12, 14, 20, 22, selectivity energizable, to move the microparticles, by a controller providing the voltage source (no reference number). Additionally, Batchelder teaches the use of biasing elements 28 effective to impart z-dimension forces to the microparticles (column 4, line 10- column 8, lines 36, Figs. 2A-6A). Note: claims 12, 71-74 are merely a functional recitation, functional recitations are not accorded patentable weight in a claim drawn to an apparatus. No structure is recited within these claims.

10. Claims 1-4, 8-17, 36-45, 80-83 are rejected under 35 U.S.C. 102(b) as being anticipated by Pethig *et al* (USP 5,795,457).

Pethig *et al* teach an apparatus for manipulation of particles in electrical fields. The apparatus comprising: a first substrate and second substrate 2, 11, 12 defining a workplace with x-y coordinates; a plurality of magnetic microparticles 4, having effectors (e.g. charge, biological moiety, column 4, lines 34-38) adapted for controlled movement adjacent the workplace; a

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plurality of stations located at different known workplace coordinates (Figs. 5A-6); a first driving means comprising a plurality of first and second drive elements 3, on both substrates, selectivity energizable to move the microparticles by a controller (Fig. 8). Additionally, Pethig *et al* teach the use of biasing elements 6/7 effective to impart z-dimension forces to the microparticles (Figs. 2-4). Fig. 5A disclose the microparticles in a magnetically coupled train. Note: claims 12, 71-74 are merely a functional recitation, functional recitations are not accorded patentable weight in a claim drawn to an apparatus. No structure is recited within these claims.

11. Claims 1-3, 8-17, 36-44, 80, 82-83 are rejected under 35 U.S.C. 102(b) as being anticipated by Witt *et al* (USP 5,645,702).

Witt *et al* teach an apparatus for manipulation of particles in electrical fields. The apparatus comprising: a first substrate and second substrate 10A-B defining a workplace 8 with x-y-z coordinates; a plurality of magnetic microparticles, having effectors (e.g. charge, biological moiety) adapted for controlled movement adjacent the workplace; a plurality of stations 12A-C, 12A'-C', located at different known workplace coordinates (Fig. 1-5); driving means comprising a plurality of first and second drive elements 16A-C, 16A'-C', on both substrates, selectivity energizable to move the microparticles by a controller 22A-C. Note: claims 12, 71-74 are merely a functional recitation, functional recitations are not accorded patentable weight in a claim drawn to an apparatus. No structure is recited within these claims.

Allowable Subject Matter

12. Claims 67-78 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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13. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or suggest a chamber opening within the substrate which includes a capillary port communicating between the interior of the chamber and the workplace.

Conclusion

14. No claims allowed.

15. The prior art made of record and not relied upon which is considered pertinent to applicant's disclosure are Zhou *et al*, McBride *et al*, Becker *et al*, and Benecke *et al*. They are cited of interest in that they show various embodiments of apparatus for the manipulation of a microparticle along a substrate.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to P. Kathryn Bex whose telephone number is (703) 306-5697. The examiner can normally be reached on Mondays-Thursdays, alternate Fridays from 6:00 am to 3:30 pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 308-4037.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Kathryn Bex

P. Kathryn Bex
Patent Examiner
AU 1743
March 24, 2003

Jill Warden
Jill Warden
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